# HYDRAULIC CONTROL VALVE

## With Manual Selector

## Model IR-105-Z

The BERMAD Hydraulic Control Valve is a hydraulically operated, diaphragm actuated control valve that opens and shuts in response to a local or remote pressure command.


**[1]** BERMAD Model IR-105-Z opens upon local manual command.
**[2]** Kinetic Air Valve Model IR-K10
**[3]** Combination Air Valve Model IR-C10
**[4]** Electromagnetic Flow Meter
**[5]** Pressure Sustaining Valve Model IR-130-55-3W-X

### Features & Benefits

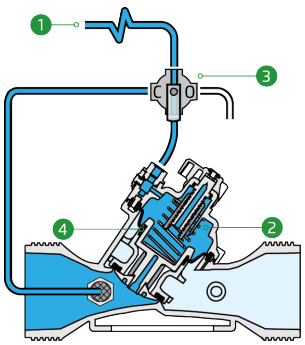
- Hydraulic Control Valve
  - Line pressure driven
  - Hydraulically On/Off controlled
- Engineered Composite Valve with Industrial Grade Design
  - Adaptable on-site to a wide range of end connection
  - Highly durable, chemical and cavitation resistant
- hYflow 'Y' Valve Body with "Look Through" Design
  - Ultra-high flow capacity at low pressure loss
- Unitized "Flexible Super Travel" (FST) Diaphragm and Guided Plug
  - Accurate and stable regulation with smooth closing
  - Requires low actuation pressure
  - Prevents diaphragm erosion and distortion
  - Simple in-line inspection and service

### Typical Applications

- Automated Irrigation Systems
- Distribution Centers
- Low Supplied Pressure Irrigation Systems
- Energy Saving Irrigation Systems

### Operation:

Hydraulic Command [1] is applied to the Control Chamber [2] through the Manual Selector [3] . This creates superior closing force that moves the Diaphragm Assembly [4] to a closed position. Discharging of pressure from the control chamber, by turning the manual selector, causes the line pressure acting on the lower side of the diaphragm assembly to move the valve to an open position.

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## Technical Data

**Pressure Rating:**
150 psi

**Operating Pressure Range:**
7-150 psi

### Materials

**Body & Cover:**
Polyamide 6 & 30% GF

**Diaphragm:**
NR, Nylon fabric reinforced

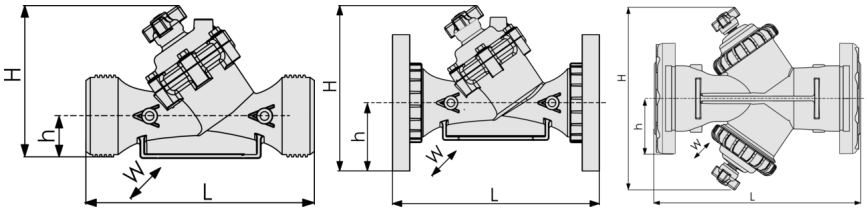
**Spring:**
Stainless Steel

### Control Loop Accessories

**Tubing and Fittings:**
Polyethylene and
Polypropylene

### Technical Specifications

For other patterns and end connection types,
Please refer to BERMAD full engineering page.



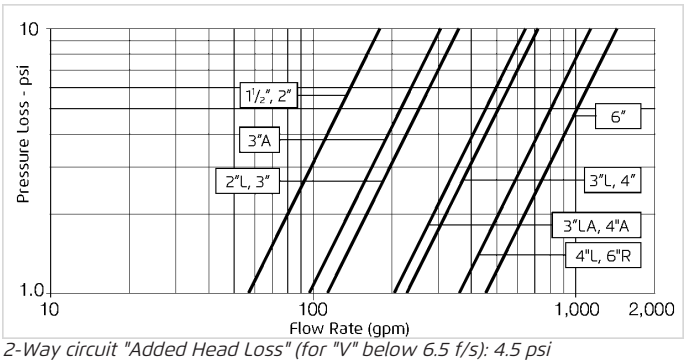

| Size | Pattern | End Connection | Weight (Lb) | L (In) | H (In) | h (In) | W | CCDV (Gal) | CV |
|---|---|---|---|---|---|---|---|---|---|
| 1½" ; DN40 | Oblique | Threaded | 2.4 | 7⅞ | 6⅞ | 1⅝ | 3⅜ | 0.026 | 58 |
| 2" ; DN50 | Oblique | Threaded | 2.7 | 9⅛ | 6⅞ | 1⅝ | 3⅜ | 0.026 | 58 |
| 2"L ; DN50L | Oblique | Threaded | 3 | 9⅛ | 7⅜ | 1¾ | 5⅜ | 0.033 | 116 |
| 2½" ; DN65 | Oblique | Threaded | 3 | 9⅛ | 7⅜ | 1¾ | 5⅜ | 0.033 | 116 |
| 3" ; DN80 | Oblique | Threaded | 4 | 11¾ | 7⅞ | 2¼ | 5⅜ | 0.033 | 116 |
| 3" ; DN80 | Oblique | Metal Flanges | 10 | 12⅛ | 9⅝ | 4 | 7⅞ | 0.033 | 116 |
| 3" ; DN80 | Oblique | Plastic Flanges | 6 | 12⅛ | 9⅝ | 4 | 7⅞ | 0.033 | 116 |
| 3"L ; DN80L | Oblique | Threaded | 7 | 11¾ | 9⅛ | 2⅜ | 6⅝ | 0.136 | 231 |
| 3"L ; DN80L | Oblique | Metal Flanges | 10.1 | 12⅛ | 12½ | 4 | 7⅞ | 0.136 | 231 |
| 3"L ; DN80L | Oblique | Plastic Flanges | 8.2 | 12⅛ | 12½ | 4 | 7⅞ | 0.136 | 231 |
| 4" ; DN100 | Oblique | Metal Flanges | 16.3 | 13⅞ | 13 | 4½ | 8⅞ | 0.136 | 231 |
| 4" ; DN100 | Oblique | Plastic Flanges | 10 | 13⅞ | 13 | 4½ | 8⅞ | 0.136 | 231 |
| 4"L ; DN100L | Oblique | Metal Flanges | 24.7 | 17½ | 13⅜ | 4½ | 9 | 0.253 | 393 |
| 4"L ; DN100L | Oblique | Plastic Flanges | 20.2 | 17½ | 13⅜ | 4½ | 9 | 0.253 | 393 |
| 6"R ; DN150R | Oblique | Metal Flanges | 36 | 18½ | 14⅞ | 5⅞ | 11⅜ | 0.253 | 393 |
| 6" ; DN150 | Boxer | Grooved | 26 | 19 | 15¼ | 4 | 18¾ | 2x0.136 | 462 |
| 6" ; DN150 | Boxer | Plastic Flanges | 27.6 | 19⅞ | 15¼ | 5⅝ | 18¾ | 2x0.136 | 462 |

CCDV = Control Chamber Displacement Volume • Threaded = BSP & NPT are available. External thread is available for 2" and 2½" only. • Other End Connections are available on request. For dimensions and weights of adapters or valves with adapters please consult with customer service.

### Additional Features

| Code | Description | Size Range |
|---|---|---|
| M | Flow Stem (*Exclude sizes 4"L, 6"R) | 1½"-6" |
| 5 | Plastic Test Point | 1½"-4" |
| V3 | Victaulic PVC Adaptors 3" | 3" |
| V4 | Victaulic PVC Adaptors 4" | 4" |

### Flow Chart




*2-Way circuit "Added Head Loss" (for "V" below 6.5 f/s): 4.5 psi*

### Differential Pressure & Flow Calculation

$$\Delta P = \left(\frac{Q}{Cv}\right)^2$$

Cv = gpm @ ΔP of 1 psi
Q = gpm
ΔP = psi